

Alaska Shellfish Fisheries

INTRODUCTION

Alaska's major shellfish fisheries developed in the 1960s in the Gulf of Alaska, and subsequently expanded to the Bering Sea/Aleutian Islands region. Shellfish landings in 1993 generated an ex-vessel value of \$328 million. The most important of these are the king, Tanner and snow crab fisheries at \$304 million. Western Alaska shrimp resources remain depressed, and sea snails are essentially unharvested. Other miscellaneous invertebrate landings contributed about \$21 million to ex-vessel revenue in 1993.

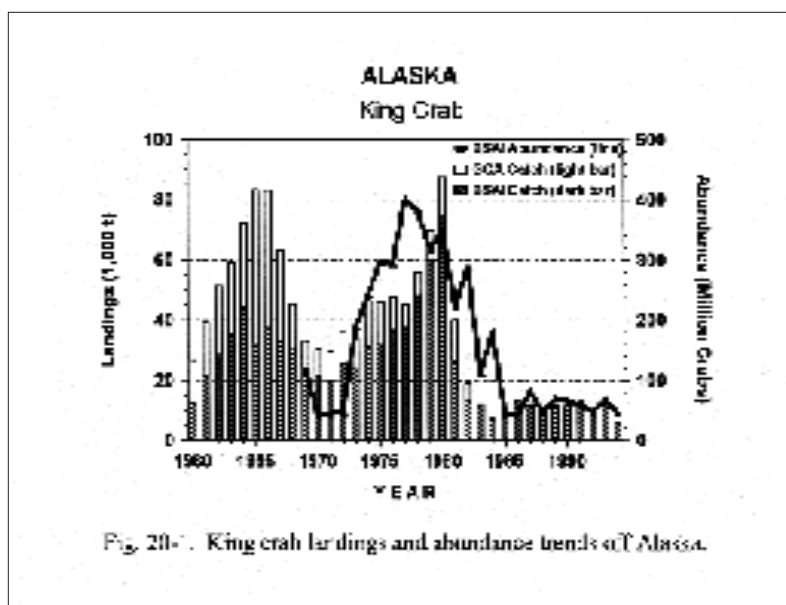
King and Tanner crab fisheries are managed primarily by the State of Alaska, with advice from a federal FMP for the Bering Sea and Aleutian Island stocks. The sea snail resource falls under management of a federal preliminary FMP. Shrimp and other near-shore fisheries are managed by the State of Alaska.

SPECIES AND STATUS

Crab

Three species of king crabs (red, blue, and golden or brown) and two species of Tanners (Tanner crab and snow crab) are harvested commercially off Alaska. Values for RAY, CPY, and LPTY are presented in Table 20-1. Information on CPY and LPTY is lacking for king and Tanner crabs; thus default values were derived from historical average landings. LPTY is represented by catch averages; CPY is set equal to RAY, calculated as the most recent three-year average. Stock status is determined by comparison of the short-term average catches against long-term production. The RAYs for king and Tanner crabs are below their respective LPTYs. By contrast, RAY for snow crabs is above its LPTY. Alaska crabs are fully utilized.

The ex-vessel value for king crabs in 1993 was \$93 million, \$45 million for Tanner crabs, and \$165 million for snow crabs. Landings in 1994 were: king crab (5,640 t), Tanner crab (5,360 t), and snow crab (67,938 t). Almost all this production came from the Bering Sea, where value and landings were divided as follows:



King crab (\$87 million from 5,500 t) and Tanner crab (\$40 million from 3,599 t). All snow crab landings came from the Bering Sea, and these dominated the total crab landings, comprising 55% of value and 88% of catch.

The fleet fishing for Alaskan crab is comprised of 350-400 vessels, many of which are based in the Pacific Northwest. Crabs are captured with baited pots, and most of the catch is landed in Dutch Harbor, Alaska. Catches are restricted by quotas, seasons, and size and sex limits, with landings restricted to large male crabs. Fishing

Alaska King Crab Landings (t)		
	Bering Sea	GOA
1993	12,300	100
1994	5,500	140

Table 20-1.

Alaska Shellfish

Productivity in metric tons and status of fisheries resource

Species	Recent Average Yield (RAY)	Current Potential Yield (CPY)	Long-Term Potential Yield (LPTY)	Fishery Utilization Level	Stock Level Relative to LPTY
King crabs	9,007	9,007	36,529	Full	Below
Tanner crabs	9,952	9,952	19,844	Full	Below
Snow crabs	105,214	105,215	36,980	Full	Above
Shrimps	1,500	1,500	15,675	Full	Below
Snails	71	Unknown	4,751	Under	Unknown
Total	125,744	125,745	113,779		

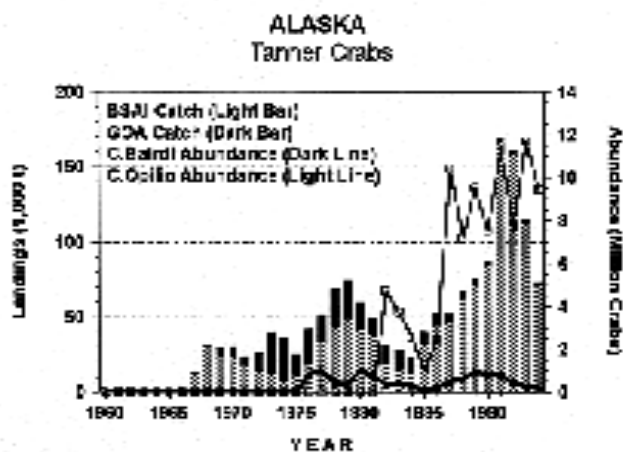


Fig. 20-2. Tanner crab landings and abundance off Alaska.

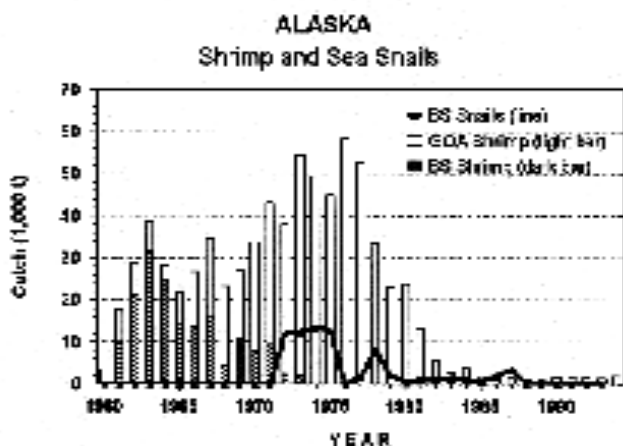


Fig. 20-3. Shrimp and sea snail landings off Alaska.

Tanner Crab Landings (t)

	Bering Sea	GOA
1993	7,716	1,910
1994	3,599	1,760

Snow Crab Landings (t)

	Bering Sea	GOA
1993	104,700	0
1994	67,900	0

seasons are set at times of the year which avoid molting, mating, and soft-shell periods, both to protect crab resources and to maintain product quality.

Catch and abundance trends for king crabs are shown in Fig. 20-1. After a 1964-66 peak, declines were evident. Until 1967, Japanese and Russian fisheries dominated Bering Sea landings, but those fisheries were phased out by 1974. In the Bering Sea, domestic catches peaked at 74,000 t in 1980, dropped precipitously in 1981, and hit a low in 1984. Since then, the catch has

been low and trendless. Gulf of Alaska catches peaked in 1965, then varied at a relatively low level for a decade before dropping lower still in 1983. Almost all Gulf king crab fisheries have been closed since 1983.

Tanner and snow crab trends are shown in Fig 20-2. The 1965-75 period was a developmental phase for the fisheries. During 1975-85, the catch peaked at about 75,000 t in 1979 and then declined. Since 1984 the catch increased, reaching an all-time high of 168,000 t in 1991, and then decreased into 1994. Abundance trends for Bering Sea stocks indicate that the Tanner crab stock declined from a relatively high level in the late-1970s to a low in 1985. The stock recovered and then declined again subsequent to 1989, and is currently at a low level. From a low in 1985, snow crab rebounded sharply, producing the high catches in 1991. A recent decline in the commercial stock has been masked by increasing numbers of pre-recruit males, which should provide improved catches in the next few years.

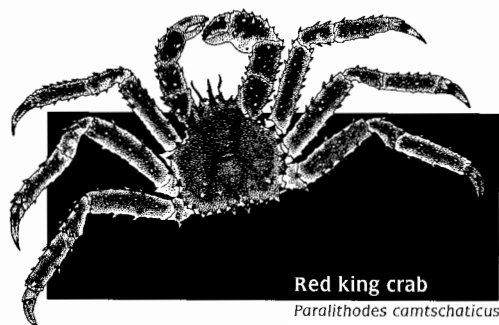
Shrimp and Sea Snail

The northern pink shrimp is the most important of the five species making up Alaska shrimp landings. The domestic shrimp fishery in western Alaskan waters is currently at a low level. Shrimp abundance is also too low in the Bering Sea to support a commercial fishery. The western Gulf has been the main area for shrimping. During the 1970s, when the fishery was more productive, 50-100 vessels trawled for shrimp at Kodiak and along the Alaska Peninsula.

Shrimp landings in the western Gulf during 1960-90 (Fig. 20-3) show that catches rose steadily to about 58,000 t in 1976 and then declined precipitously. Since 1988, negligible amounts have been landed. Ex-vessel revenue from the western shrimp fisheries averaged \$4 million annually, and yielded a peak revenue of \$14 million in 1977. Bering Sea shrimp catches by Russia and Japan peaked at 32,000 t in 1963, declining gradually thereafter, until the fishery ended in 1973. As with crabs, the potential yields of Alaska shrimp stocks are not well understood, and they have been equated to average catches. Shrimp are managed by regulating catch levels according to stock abundance. In addition, spring "egg hatch" closures are used to protect breeding stocks.

The Japanese fishery for snails, conducted

from about 1971 until ending in 1987, reached a peak of some 13,000 t in 1974. Catches averaged about 4,800 t during the period of the fishery. The snail stocks of the Bering Sea are underutilized because they are currently only lightly harvested, with four vessels participating in the Bering Sea. RAY and CPY equal the 1992-93 average catch, and LTPY equals the 1971-87 average.



ISSUES AND PROGRESS

Bycatch and Multispecies Interactions

In general, crab and shrimp resources are down throughout Alaska. The red king crab stock in Bristol Bay is particularly low. For this reason, the fishery in Bristol Bay was closed in 1994 due to low spawning stock level.

The bycatch of crabs in trawl and pot fisheries continues to be a major issue. Not only is bycatch an allocation problem, but unknown mortalities from discards of crabs from pot and trawl catches could have an impact on the crab stocks. When crab abundance is low, bycatch mortality, added to directed fishing mortality, would impose unacceptable risks to stock recovery. □

Alaska Shrimp Landings (t)

	Bering Sea	GOA
1993	0	1,320
1994	0	1,890

	Bering Sea	GOA
1993	0	1,320
1994	0	1,890